GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

PEMBROKE.

G.R. GEO. III.
BRITISH MUSEUM

GENERAL VIEW

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AGRICULTURE

OF THE COUNTY OF

PEMBROKE,

WITH OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

BY CHARLES HASSALL.

DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTURE AND INTERNAL IMPROVEMENT.

K. Academies

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ADVERTISEMENT.

THE following valuable communication, respecting the present state of husbandry in the county of Pembroke, and the means of its improvement, drawn up for the consideration of the Board of Agriculture, is now printed, merely for the purpose of its being circulated there, in order that every person, interested in the welfare of that county, may have it in his power to examine it fully before it is published. It is therefore requested, that any remark, or additional observation, which may occur to the reader, on the perusal of the following sheets, may be written on the *margin*, and transmitted to the Board of Agriculture, at its office in London, by whom the same shall be properly attended to; and, when the returns are completed, an account will be drawn up, of the state of agriculture in Pembrokeshire, from the information thus accumulated, which, it is believed, will be found greatly superior, to any thing of the kind, ever yet made public.

The Board has adopted the same plan, in regard to all the other counties in the united kingdom; and, it is hardly necessary to add, will be happy to give every assistance in its power, to any person who may be desirous of improving his breed of cattle, sheep, &c. or of trying any useful experiment in husbandry.

TO

TO THE READER.

IT is requested, that this paper, with any marginal remarks, may be returned to the Board of Agriculture, before the first of March next.

It is hardly necessary to add, that the Board does not consider itself responsible, for any fact or observation contained in these Reports, which, at present, are printed and circulated, for the purpose merely of procuring additional information, and of enabling every one, to contribute his mite, to the improvement of the Country.

January, 1794.

INTRODUCTORY ADDRESS.

THE Land Owners and Occupiers of the County of Pembroke, are requested to peruse the following sheets with candour; and to recollect, that in a work of this sort perfect accuracy is not to be expected.

Those gentlemen who discover any thing in this report, materially differing from their own ideas; will have the goodness to consider, that general and not local observation has guided the execution of it.

The slow progress of agricultural improvements in this county, makes some gentlemen despair of its being carried to any considerable length during the present age.

For their comfort, let me remark; that the perfection, to which farming and breeding are carried in the midland counties of England, was established in the course of about twenty years in the present century, by the laudable exertions of a few intelligent individuals, without any extraordinary aid or patronage.

May not the county of Pembroke then, look forward with the fullest confidence of success; when it is considered, that the great national advantages it possesses, will be brought into action under the fostering care of the most liberal, respectable, and public-spirited institution that ever was established in this or any other country, for promoting

promoting the prosperity, exciting the industry, and establishing the happiness of a nation.

That the Land Owners and Occupiers of Pembrokeshire may be among the foremost to feel the happy effects resulting from the vigorous exertions of the National Board of Agriculture, is the earnest wish of, their

Devoted and obedient servant,

CHARLES HASSALL.

PEMBROKESHIRE.

For remarks and additional observations.

PEMBROKESHIRE, the western county of South Wales, is bounded southward by the Bristol Channel, westward by the Irish Channel, north-westward by Cardigan Bay, north-eastward by the counties of Cardigan and Carmarthen.

Extent. Its length from north to south is about 35 miles, and its breadth about 29 miles, containing 335,600 acres, divided into the hundreds of Castlemartin, Roos, Dungleddy, Narberth, Dewsland, Kemmes, and Kilgerran.

Ports. It includes the spacious harbour of Milford Haven, which extends its branches in various directions so as to embrace a large district of the southern part of the county; and is navigable for vessels of burthen to the towns of Pembroke and Haverfordwest; also to Cresswell Quay and Blackpool. Its extent, depth of water, facility of entrance, roads, bays, and creeks; the steadiness and regularity of its tides, security of anchorage and other natural advantages, have raised its character to such a height among sea-faring men; that it is asserted, all the navies of Europe could ride afloat in perfect safety in Milford Haven. The sea-ports in Pembrokeshire next in rank to Milford Haven; are Tenby on the south coast; Little Haven, Solvach, Fishgard, and Newport on the west; and the port of Cardigan on the north, besides several of less note; so that it is evident, no part of the kingdom of equal extent, is better circumstanced for exporting its products, or for importing such necessaries of life as the inhabitants stand in need of from other countries.

Market

For remarks and additional observations.

Market Towns. The market towns of this county are Haverfordwest, Pembroke, Tenby, Narberth, Fiſhgard, Newport; and Cardigan, which lying close at the edge of Pembrokeſhire, may properly be deemed one of its markets.

Soils. The soil of Pembrokeſhire includes the extremes of good and bad in a striking degree; with all the intermediate gradations; this circumstance points out the necessity of classing the soils into first, second, third, and fourth; and in due time and place to note the sort of improvement to which each class seems particularly adapted.

First class of Soil. The first is the strong red loam, with a sub-stratum of red rock, or what is here provincially called, Rabb. This red rabb, when thrown up and exposed for some time to the sun and air, becomes friable, and breaks down to a saponaceous substance, not unlike the slate marle found about Sutton in Warwickshire, but inferior to it in quality. The rabb thus pulverized, becomes a component part of the soil without injuring its quality, and the shovelling of roads composed of this material, when mixed with lime, makes an excellent compost manure. The general thickness of the red loamy soil, is from 6 to 14 inches. Average about 10 inches.

Second class of Soil. The next soil in value, is the grey loam, composed of a mixture of sand and brick earth, with a sub-stratum of brown and blue rock or rabb. Of this soil, the largest portion of Pembrokeshire consists. Near the western coast this soil is frequently mixed with a quantity of grey porous field stones, which are known to be very favorable to the growth of corn. The soil near the coast, is generally composed of a larger proportion of sand than is found farther inland, the consequence (no doubt) of the frequent application of sea sand as a manure; though in some places, the great mass of the soil seems to consist of sand and a small mixture of brick earth. The reason why the grey stones are so favorable to the growth of

For remarks and additional observations.

of corn, seems very obvious. In stormy weather the wind carries the sea brine over the land to a considerable distance, which finds a receptacle in the stones; and in summer, when the heat becomes strong and injurious to the crops in other lands, th e grey stone preserves a continual moisture at its base, and nourishes the roots of the corn, whilst its surface affords a regular wa rmth to the blade. This soil is generally from 6 to 12 inches thic k. In some parts of the district, this kind of soil is found upon a clay bottom.

Third class of Soil. The next class is a light peaty soil, upon a clay bottom; and justly deemed the worst of all. The lands of this class are generally wet and cold; and in their natural state, very unproduc tive; commonly overrun with rush, heath, and furze; and capable of producing pasture only for the summer months, for inferior sorts of horned cattle and colts.

Fourth class of Soil. The fourth class is the peat, which abounds in the mountainous parts of the county; but as this produces excellent fuel, and is useful for that purpose only, it is not likely that any extensive attempts will be made to reduce it to any of the purposes of agriculture in our time; for which reason I decli e entering into a further description of it.

Surface of the County described. This county is, for the most part, composed of swells or easy slopes, but not mountainous, except a ridge of hills, which runs from the coast near Fishgard to the borders of Carmarthenshire; these hills are called the Mountains; and the people distinguish the country with reference to the hills; the north side being called above the mountains; and the south side below the mountains: this distinction will probably be referred to in the course of the survey. The county is well watered, by springs rising in the slopes, and bisecting the swells, so as to give a convenient supply to the adjacent

For remarks and additional observations.

lands in general; but some parts of the coast are in want of water in the summer season; particularly where limestone is found at a moderate depth.

Climate. The climate of Pembrokeshire is temperate. It rarely happens that frost continues with severity for any considerable time; nor does snow lie long upon the ground, but generally dissolves the second or third day after its fall.

We often read of skaiting in St. James's Park, when the weather is perfectly mild and open in Pembrokeshire. Sometimes a continuance of north-east wind occasions a severe frost; which a change of wind to the south-west never fails to subdue.

The prevailing state of our air is moist; and we have more rain than perhaps any other part of the kingdom; owing to our insular situation and the high mountains of Carmarthenshire and Breconshire lying in the eastward, which stop the current of the clouds brought by the westerly winds from the Atlantic Ocean; and occasion thereby torrents of rain to descend in Pembrokeshire whenever those winds prevail.

Proprietors. The county of Pembroke is divided among a vast number of Land owners. Mr. Campbell of Stackpole Court, Lord Milford, Sir Hugh Owen, and Mr. Barlow of Lawrenny are reckoned the great landlords of the county. A numerous class of gentlemen of from £2000. down to £300. a year, make up a large proportion of the remainder, and a considerable number of proprietors below that amount, who for the most part occupy their own lands, compleat the account.

Farms. The farms are as diversified as the landlords, and may be reckoned from 500 acres down to 50. About 200 may be taken as the average extent of Pembrokeshire farms.

Land, how employed. The land is generally employed in mixed husbandry; most of the farmers having dairy stock, breeding

For remarks and additional observations.

breeding stock of cattle, and colts, and also a portion of their farms in tillage.

Grasses now in use. The grasses cultivated in Pembrokeshire are—red clover and rye grass. Some farmers sow white clover, cock grass, and the purple clover, or mail grass; but these are rather of a late introduction.

Watered Meadows. The benefit of watering meadow lands begins to be generally acknowledged in the county; and the opportunities for applying this valuable branch of improvement are almost every where to be met with.

The great impediment is, the want of skill in conducting the water, and in making ponds.

Independent of the soils before mentioned, a range of country runs along the south coast of Pembrokeshire, of a peculiar kind.

Castlemartin. This comprehends principally, the hundred of Castlemartin, which forms a peninsula between the sea and Milford Haven for about 19 miles in length, and of various breadths from 8 miles to 5; taking the sea, the Haven of Milford to Carew Castle, and thence along the vale of St. Florence to the sands near Tenby, for its boundaries.

Almost the whole of this tract is either a fine loam of considerable depth on a limestone rock (which forms a most stupendous barrier to the sea); or a red earth upon an argillaceous stone, provincially called Rabb; or a combination of both, for a considerable distance on the confines of each—the sub-stratum which divides the rock from the soil, is a brick earth, which the husbandman is generally cautious to avoid, presuming it forms a kind of pan, which retains for a length of time the effect of his industry.

Of these soils that which seems to be the combination of the two, is considered of the happiest sort, being equally grateful to the grazier and the plowman.

For remarks and additional observations.

The red land is considered as somewhat preferable to the limestone soil for grass; more particularly, as it is generally better supplied with springs of water.

The limestone having a greater depth of soil, is more to be depended upon for corn; though it is, in many instances continued in grass with success; but indeed, such is the excellence of this tract of country, that the land rarely fails to make a liberal return for whatever fair treatment it receives.

The mildness of the climate, the moisture of the atmosphere, the very little frost to which the country is subject, and the perpetual vegetation which is uniformly going on, even in the winter months, seem to point out this tract in so peculiar a manner favourable to grass, that one cannot but lament to see so much of it under the plough.

It is, I apprehend, to the want of markets alone for fat cattle, that we are to attribute this misapplication of the soil; which is capable of making ample provision for a great consumption.

And it is to be presumed, if the harbour of Milford should ever become of that importance in the eye of government, to which it is justly intitled, from its magnitude, safety, convenience, and easy access, this country and an extensive tract of land on the north side of the Haven, would be instantly induced to follow that system for which nature seem to have intended it; and afford supplies of fat cattle and sheep, to an extent few people would suppose, who are not intimately acquainted with its vegetative powers. The husbandry of this neighbourhood, though not materially different from the rest of the country, has been for many years considered as claiming the character of a better system of management; but whether it has preserved a progressive improvement of late years, and held its rank in the general improvement of the country, I will not take upon me to determine. The

farmers

For remarks and additional observations.

farmers however plume themselves upon a superiority of management; rather than upon a superiority of soil, to which I am inclined to think they are much better intitled.

There are however, instances where nature has been assisted in bringing the soil to its proper state—to that state of verdure to which it is so peculiarly adapted, and the improvement has been effected more by judicious management, than any extraordinary exertions or expensive process.

Indeed, such are the vegetative powers of the soil, that after it has been ever so much exhausted by excessive tillage, if left to itself, untouched by the plough, it will exhibit early signs of returning vegetation; and in the course of a few years, will recover its natural fertility. And where (as in the instances before alluded to) it has been judiciously cropped, cleared of the couch grass and other weeds, which repeated bad husbandry had introduced, and then laid down in tolerable heart, the progress of improvement to pasture and meadow has been unusually rapid.

The practice of what is provincially called Fogging, or keeping the land without stock from June to March, which the mildness of our winter permits without detriment to the grass, is found to assist the young pasture in a very extraordinary manner; nor can too much be said in support of a practice so obviously advantageous to the dairy-man and the breeder.

The property of this valuable tract is in very few hands. From Freshwater East Bay, along the southern coast by Freshwater West, round the south cape of Milford Haven, and up the Haven for several miles; comprehending a tract of country of about 14 miles in length, and of various breadths from 7 to 4, including the intire parishes of Stackpole — St. Petrox — Bosherston — St. Twinnels — Warren — Castlemartin, and Angle; together with a considerable part of the parishes of Roscrowther — Pulcroghan,

For remarks and additional observations.

croghan, and Pembroke, containing about 16000 acres, is the intire property of Mr. Campbell of Stackpole Court, and forms one of the finest and best connected estates that has ever fallen within my observation in any part of the kingdom; being all valuable land, without the intervention of mountain, waste, or common.

Sir Hugh Owen and Mr. Meyrick of Bush have also extensive and fertile possesions in the hundred of Castlemartin.

There seems nothing wanting to this tract, but an addition of timber; which its contiguity to the western ocean renders difficult and slow of growth.

That the sea winds are here adverse to forest trees, will not be disputed; but there are numberless situations, where timber of all sorts would flourish to the satisfaction of the planter; as the woods about Stackpole Court, planted by the immediate predecessor of the present proprietor; and also those about Orielton, planted by the great grandfather of Sir Hugh Owen; with the flourishing groves about Bush, the seat of Mr. Meyrick, afford undeniable proof—The fact is, most of the attempts to raise timber have been on so small a scale as not to afford that protection to each other, which the sea winds render necesary: But I can entertain little doubt, if they were extended to a proper size, there are very few situations where this valuable and ornamental improvement might not be prosecuted with every expectation of success.

It is to be lamented, that in a county thus fertile, containing such an harbour as Milford Haven, which intersects it in various directions by navigable creeks, capable of admitting vessels of great burthen, no trade of any sort should enliven the scene, or contribute to draw forth the talents of the inhabitants or the produce of their country; but merely the exportation of coal and limestone.

The

For remarks and additional observations.

The Institution under which this survey is made, may be the means of making the local advantages of this district better known; and may point out to government, the facility with which the navy of England might receive great assistance, in being victualled on moderate terms, provided the article of salt for that purpose was allowed to be imported on low duties, on the same footing as in Ireland.

If the county had timely notice of the demands likely to be made upon it, preparations would take place to insure supplies to any extent. But under the present pursuits of the farmers; who for want of markets to sell fat oxen, are obliged to dispose of them lean to the drovers; there have been instances of a single ship of war not being able to procure, at Milford Haven, a supply for a cruise of a few months.

This however was not the fault of the soil, nor of the people, but merely the effect of the unprofitable system of selling off their cattle lean, for want of a steady demand for them when fat; as the great distance from the metropolis will not admit of fat cattle being driven to that market, without losing too much of their flesh.

Fens. Castlemartin-Corse. The only fen of note in this county, upon which any modern improvement has taken place, is Castlemartin-Corse; a tract of several hundred acres; which, within these four years, was a perfect bog, of little or no value. Mr. Campbell of Stackpole Court having obtained an act of parliament for draining and inclosing it, such an improvement is already made as must convince every observer, what ground of this sort is capable of, under skilful and attentive management.

It is now completely drained, inclosed, and divided by ditches, most of which are planted with willows or other aquatics, promising in a few years to form sufficient shelter and

For remarks and additional observations.

and protection to stock of every kind; and the greatest part of it is under a judicious course of tillage preparatory to its being converted into meadow.

Being in its original state covered with rush, sedge, or coarse unprofitable grass, the improvement has been effected by paring (with a plough, as in the fens of Cambridgshire) and burning, as a preparation for cole-seed; after which a crop or two of corn has been taken to bring the soil into tilth fit to receive grass seeds.

No agricultural improvement that I have been a witness of in the course of extensive and long experience, has succeeded better than this undertaking; which promises in a very few years to become some of the most valuable land in the county. It is now the entire property of Mr. Campbell of Stackpole Court.

Grains. The grains principally sown are, wheat, barley (the general bread corn of the people); and oats; some rye, and a few pease; but of late years the wet seasons have rendered the latter crops so precarious, that very few are now grown.

Rotation of Crops. No systematic rotation of crops seems to guide the Pembrokeshire farmers. He sows as his own sagacity or caprice dictates, and generally turns his fields out of tillage, when he finds by sorrowful experience it will not return him crop enough to pay his expences. Sometimes he begins with a fallow — then — *limed and dunged*, for

Wheat.
Barley.
Oats, or Barley.
Barley again, or Oats.
Oats.
Oats.

and ends in weeds and disappointment.

Sometimes

For remarks and additional observations.

Sometimes

Ley Oats.
Barley ——————— *Manured for.*
Pease.
Barley.

Oats — Oats — Oats, as long as oats will grow.

But, whilst this absurd and too general practice is exposed to the contempt of every intelligent agriculturist, let us not withhold the just commendation due to many of the farmers of Pembrokeshire, whose minds are open to the obvious advantages of a better mode of husbandry, and whose farms exhibit the pleasing tokens of better management. The usual course with farmers of this description is — a clean summer fallow well dressed and manured with lime, dung, and compost, for

Wheat.
Barley. Perhaps
Pease — not lately so much used.
Barley or Oats, and laid down with
Clover and Rye Grass.

This course, though not desirable, is infinitely preferable to the destructive havock made of the soil by the slovens I before mentioned; and if the land be well manured in the following process, I have sometimes seen good crops of grass succeed.

Turnips. Green crops are lately introduced by a few intelligent cultivators, and great hopes are entertained of the success of this practice; but there is not yet sufficient experience, to fix the practice in the district. Turnips seem to be better liked than cabbage. A mixture of rape with the turnips is well spoken of, by some who have tried it; and rape alone is used with success.

Manures. Near the coast, where good shelly sea sand can be procured, it is used with great success for manuring barley lands; particularly about St. David's, and

For remarks and additional observations.

the northern parts of the district, where they carry sand several miles inland.

The general manure of the district is lime, which abounds in the southern parts of the county, and is carried by water round to the country above the mountains; also by land to the interior parts of the county. Lime mixed with road-shovellings, ditch earth, or bog stuff, is a favorite manure for barley. Lime laid on fallows, with the addition of yard muck, is found to answer best for wheat.——No great attention is paid to the making of dunghills.

Plough. The Welch plough is in common use in Pembrokeshire; and perhaps a more awkward unmeaning tool, is not to be found in any civilized country. It is not calculated to cut a furrow, but to tear it open by main force. The share is like a large wedge; the coulter comes before the point of the share sometimes, and sometimes stands above it; the earth board is a thing never thought of, but a stick (a hedge stake, or any thing) is fastened from the right side of the heel of the share, and extends to the hind part of the plough: this is intended to turn the furrow, which it sometimes performs, sometimes not; so that a field ploughed with this machine, looks as if a drove of swine had been moiling it. Some intelligent men in Castlemartin hundred have, however, improved this plough with success, by adding a wing or fin to the share, and an earth board; and I have seen such work done with their ploughs, as would not disgrace any country; nay even with the common Welch tool I have described, some of the peasants make better work than could be expected.

Harrows. The harrows are badly constructed. Of late years the English Crabb-harrows have been introduced in some parts of the district; they are found to suit the soil, and it is hoped the use of them will become general.

Carts.

For remarks and additional observations.

Carts. The Welch cart is a bad one; but owing to the general narrowness of the bye roads, they are confined in the length of the axletree, and are obliged to make the body of the cart too long for the breadth, which is found very inconvenient in an uneven country; and can only be remedied by a general widening of the roads, through united efforts of the magistrates and landholders. The improvement of roads must precede that of carriages.

Hedging Tools. The spades, shovels, and mattocks used in hedge and ditch work, are convenient enough, and the labourers here use them adroitly; forming the sod-face of their hedges in a very neat manner.

Reaping Hooks. The reap hook is a bad harvest tool; and it would be a great advantage to workmen and their employers, if the sickle were introduced instead of the hook now used.

Teams. The general mode is, working oxen and horses in the same teams; the usual way is to yoke two oxen in a wain or cart drawn by a pole, which is fixed by the end to a ring pendant from the centre of the yoke; with two horses abreast as leaders. The expedition these teams use in conveying coals to the ships on our shores, which must always be loaded in one tide, never fails to strike, with equal wonder and compassion, a byestander not used to such rapid driving as is always exhibited upon those occasions. In short distances, and for all work to be done upon a farm, the ox is certainly an useful and profitable servant. He is maintained at less than half the expence of the horse; and when his labours are no longer required, he pays the owner double the original cost.

Oxen. The Pembrokeshire steer, which costs from four to five pounds at two years and a half old, commences his labour the ensuing spring, and will commonly sell

For remarks and additional observations.

for ten pounds or guineas, at five years old; and sometimes will bring even twelve pounds, if he has been tolerably well used and fairly kept. Notwithstanding these seeming advantages of ox labour, I have strong doubts of their utility in the general way of working them in this district.

In all business which unites hard and constant labour with dispatch, I am rather confident the horse team is preferable; such as the regular round of active work upon a tillage farm, and all carriage upon hard roads, or for considerable distances. In such works, I hope to see prejudices giving way to better judgment, and that our farmers will increase the size and bone of the breed of draught horses, and apply them more generally to the purposes alluded to. It is painful to see oxen driven beyond what their strength can bear, and in a manner the wise Author of nature never designed them for.

Seed Time and Harvest.

Seed time for Wheat, October.
Barley, April.
Oats, March.
Pease, February.

Corn harvest generally begins early in August and ends the beginning of September, below the mountains; and a fortnight later above the mountains.

Inclosed Lands. The lands in this district are mostly inclosed.

Open Field Land. In the neighbourhood of Saint David's considerable tracts of open field land are still remaining, which is chiefly owing to the possessions of the church being intermixed with private property; and the want of a general law to enable the bishop and clergy to divide, exchange, and enclose their lands.

Advantage of Inclosing. It seems to be a general received opinion throughout this district, that dividing and inclosing

open

For remarks and additional observations.

open common field land renders it immediately of double the value it bore when open and uninclosed. The fences alone benefit the land by giving shelter to it. The husbandman manures with a certainty of reaping the fruits of his labour; and the produce and stock are consequently improved in at least a two-fold degree.

Size of Inclosures. No rule can be laid down as a standard size of inclosures. They are generally (according to the extent of the farms) well proportioned.

Population. It is pretty evident in this district, that inclosures have increased population, by giving employment to a greater number of hands.

Some years ago the labouring people of the northern parts, used to come to the south for summer employment; but since their country is become inclosed, they find work enough about home. Some hands continue to ramble southward in harvest time, but not in any degree in equal number with former years.

Waste lands. The waste lands in Pembrokeshire are estimated at 14,220 acres; capable of being inclosed and cultivated at a reasonable expence, viz.

Wastes.	*Proprietors, or Lords of Manors.*	*Contents.*
Llanvirnach —	Thomas Lloyd, Esq.	4000 acres
Kemmes — —	Ditto — — — —	5000
Maenclochog	Lord Milford — —	2500
Maenachlogddee	—— Gwynne, Esq.	1500
Marloes — —	George Meares, Esq.	150
Portfield — —	Corporation of Haverfordwest — —	900
Kingsmoor —	Lord Milford, Mr. Loveden	170

besides about 8000 acres in the lordships of Llanvirnach, Maenachlogdde, Maenclochog, and Kemmes, which lie in

For remarks and additional observations.

in too high a region of the air; or are so incumbered with rocks, stones, and declivities, as not to be capable of cultivation, at an expence which the future produce of those lands would repay.

Improvement of the Wastes. The wastes are now depastured by the occupiers at large, within the several manors to which they belong, without stint; and are thereby rendered of very little value to any one, by being so overstocked, as makes it scarce worth while to put stock upon them. If we except a few sheep kept by the inferior farmers living on the verge of these wastes, the profit resulting from them to the public is very insignificant indeed. I presume the best method by which the wastes could be improved, may be to divide and inclose them; allotting to the lords of the manors and persons having common-rights, according to their respective interests; and making compensation to the tenantry, in proportion to the loss they may be found to sustain by being deprived of the pasturage of the wastes. The turf upon many of the wastes being a kind of public stock, for which the inhabitants of the neighbourhood pay the lord of the manor an acknowledgment for the privilege of digging, it may be proper to let all turf bogs remain uninclosed, and subject to such regulations as may be devised for their future management. Common fields, and all intermixed lands, might be exchanged, divided, and inclosed under similar authority.

In regard to the method of occupying the wastes when inclosed; it may naturally occur to the proprietors of adjacent farms, to annex parcels of new land to the old farms, in proportion to their extent and the abilities of the tenants. Those who have no adjoining lands may erect suitable dwellings, and let their allotments in separate holdings; taking care to bind the tenants to improve by proper manuring a judicious succession of crops previous

to

For remarks and additional observations.

to the grass seeds. A tolerable specimen of this kind of improvement, is now in progress upon Narberth Forest in Pembrokeshire; which was lately inclosed by virtue of an act of parliament obtained by Mr. Knox, lord of the manor; and a specimen of draining fenny land may be seen in Castlemartin Corse, belonging to Mr. Campbell, inclosed a few years ago by act of parliament. Since we know by experience, that ocular observation leads more to agricultural instruction than all that can be written; it seems better to refer improvers of waste land to the specimens before mentioned, than to detail a series of processes, too tedious to come within the compass of this report.

Planting forest trees in many parts of the wastes, may be practised with good effect.

In situations sheltered from the west winds, and where loose rocks and large stones render the land unfit for cultivation; oak, ash, beech, sycamore, and all the fir tribe grow very well.

In some of these situations, the land is oozy, and particularly adapted to the growth of elm, alder, ash, and willow.

Custos and Justices to empower to divide Wastes. In this place it may be proper to make a few observations on the subject of inclosures in general, which, it is believed, includes the wishes of all agricultural societies and all improvers of lands in South Britain. The great trouble (and sometimes enormous expence) attending the present mode of applying to parliament for inclosure and draining bills is known to be a very great hindrance to the improvement of waste lands. People of small fortune dread the expence of these applications so much, that they will rather permit their interest in waste lands to lie dormant, than subject themselves to the greater inconvenience of an expence they are not always able to bear. To remove this difficulty, would be perhaps one of the most popular and

For remarks and additional observations.

and beneficial undertakings in which the Honorable Board of Agriculture could engage. The opinion of some of the most intelligent persons I have talked with on the subject is, that an act should be applied for, to empower the custos of each county, with the magistrates assembled at the Michaelmas quarter sessions, to appoint commissioners to divide and inclose any waste; upon the application of the majority of proprietors in value, under their hands and seals. Such commissioners to be no ways interested in the waste proposed to be inclosed; and having been previously chosen by a majority of votes at a public meeting of the proprietors, held within the manor or parish or parishes in which the wastes lie, by notice given on the church door of such parish or parishes for three successive Sundays, during divine service, next previous to the day of meeting.

Such powers as may be found necessary to invest commissioners with; and proper restrictions and regulations, as to the making the allotments and paying the expences; might be enacted, so as to answer all the purposes at present obtained by separate acts. It is generally believed in this country, that such an act of parliament would be the means of inclosing every acre of waste land in South Wales, capable of cultivation, in a very few years.

The commissioners might also be empowered to make regulations for depasturing so much of the waste lands as may be deemed unfit for cultivation, as they should see fit and proper.

Bishops and Clerical Bodies. If the act went to empower bishops and clerical bodies to exchange and inclose their lands lying in open common fields; the church revenues would be increased in numberless instances; and the property preserved from the many encroachments and curtailments to which it is now frequently liable.

Price

For remarks and additional observations.

Price of Labour. Farmers labourers are paid ten-pence a day in the summer, and eight-pence in the winter months, reckoning from the 1st of November to the 1st of March, upon their own diet. This is the general price of day labour below the mountains. Above the mountains, the price is about two-pence a day less.

In mowing time, and during corn harvest, the men are allowed diet and beer at the same wages. The better sort of people allow the keep of a cow, with wages in proportion. At piece work, they expect to get from two-pence to three-pence a day more than at day work.

Some people, however, contrive to get labourers at lower rates than those above stated; but they are perhaps not gainers by such mistaken œconomy. Good industrious men will not work at an under rate; and the idle and profligate of the country, who cannot find employment under good masters, will naturally draw towards those who offer less wages; but probably, in some way or other, they pay more in the end.

Some give eight-pence a day all the year, with a cottage and garden; and, in some instances, the keep of a cow is agreed for by the labourer on easy terms, which is equivalent to the difference of hire.

Women. Women do good part of our harvest work; and are paid, sometimes a penny, and sometimes two-pence a day, less than the men.

Hours of labour. The hours of labour are generally from six to six; with half an hour at breakfast, and an hour at dinner.

In harvest time, from six in the morning till the close of day; or so that the labourers may reach the house, to eat their suppers before it grows dark.

In winter the labourers come to their work by sun-rising, and continue as long as they can see; having eaten their

For remarks and additional observations.

breakfast before they come to work, and taking as short a time as need be at dinner.

In the northern parts of the county, there is a practice rather singular as to the hours. The labourers, from May day till corn harvest, come to work at sun-rising and quit at sun-setting; during the day, they take the usual time at breakfast, and what is called a Nooning, that is, two hours sleep from twelve o'clock till two; they then eat their dinner, and continue their labour till sun-set.

Hired Servants. The wages of hired servants differ much in this district. Above the mountains, the general price is, by the year,

First plough-man, four pounds to five.
Second, three pounds to three pounds ten shillings.
Third, about fifty shillings.
Plough-boy or driver, from a guinea to thirty shillings.
Dairy maid, three guineas to four pounds.
Cow maid, or under dairy maid, thirty shillings to forty.

Below the mountains:

First plough-man, six pounds to seven guineas.
Second, four pounds to four pounds ten shillings.
Third, three pounds to three pounds ten shillings.
Plough-driver, twenty-five to forty shillings.
Dairy maid, four guineas to six pounds.
Under ditto, fifty shillings.

Draining. Draining begins to be better understood than it was twenty-five years ago, when it was common to hear of cattle and horses being smothered in bogs; and frequently a good grass field was used only in tillage, because it contained a dangerous bog.

Farmers have found out, that the contents of quaking bogs make an excellent compost, when mixed with lime; and the example of a few intelligent improvers, has pointed out a cheap and simple method of draining, by cutting between the wet and the dry, and filling the drains with

For remarks and additional observations.

with stones, where they can be got, or else with wood. Much of this work has been done, and much more remains for the future employment of the labourer.

Fens. The fenny parts of Pembrokeshire are not extensive. Castlemartin Corse; some flats near Tenby, some near Mathry, and one in Dyffryn Gwein, are the most considerable. These fens are private property; and although they may be easily drained, and would make the finest meadows imaginable, the owners patiently receive the small rents they now produce, without seeming to entertain an idea of encreasing their rentals, by draining their fens. Castlemartin Corse is an exception to this remark, and has been already noticed.

Woods. Woods are rather scarce in this district; particularly towards the western coast. The interior part of the country is better wooded; the growth is for the most part slow; the oak is however remarkably full of heart.

The most considerable wooded estate is Slibech, lying on the eastern branch of Milford Haven.

The usual course of management in these woods, was, to thin the young shoots at the growth of three or four years; this was called Waste weeding, and generally consisted of pruning away all the inferior shoots thrown out by the stumps or stools of the trees that had been felled; leaving the most vigorous shoots, to the number of four, five or six on a stool, to grow for a succeeding crop.

In about five years more, another weeding took place; and this was called a Cordwood weeding; cuttings being come to a size fit for making charcoal.

The wood is left thin to grow for a coppice of poles; and in about fifteen years more, the poles would be fit to cut for the use of the neighbouring collieries, and would sell at about 7s. 6d. a dozen, bark and cordwood included. The bark of these poles is either sold to the

For remarks and additional observations.

neighbouring tanners, or exported to Scotland, where it finds a good market for the purpose of tanning neat's and light hides. These woods are almost wholly oak; and whilst the collieries have occasion for such vast supplies of small wood, to support their underground ways, it is not likely that the woods will be suffered to grow to timber for husbandry and building uses.

Lord Milford and Mr. Barlow, have a considerable quantity of timber trees yet remaining upon their estates, which, with a few surviving groves about Slibech, form the bulk of the present stock of timber in Pembrokeshire below the mountains. Some groves in Dyffryn-Gwein, belonging to Mr. Langhorn of Orlandon and others; Penkelly woods, belonging to Mr. Lloyd of Bronwidd, and Ffynonne woods, belonging to Col. Colby, are the most extensive above the mountains.

Nothing, therefore, can be more obvious than the advantage and necessity of preserving, as much as possible, the growing crop, and planting in all situations proper for the purpose; and there is hardly any estates in the interior and eastern parts of the county without some plantations.

It is hoped, the present proprietor of the most extensive woodlands in the county, will not be inattentive to their future growth and planting, and thereby repair, in some measure, the mutilations they have lately suffered.

The stock of timber is so reduced in the district, that there is too much reason to apprehend a few years more will bring the farmer to the sad necessity of importing wood for the ordinary purposes of husbandry.

Paring and Burning. Paring and burning is not practised in this district, as an established mode of culture, the soil being for the most part thin; it is held, with good

For remarks and additional observations.

good reason, that the surface would be rendered still thinner by paring and burning. In cultivating rough lands, overrun with heath, furze, and brushwood, this method is found very useful and expeditious; and the work is performed either by a breast plough, which a labourer pushes before him, and pares off the sod; or by a broad blade mattock, well steeled and sharpened, with which he hoes off sods in regular courses of about a foot square, rolling, and setting them up like small sugar loaves. This is another piece of work which many of our labourers perform very dexterously. When the sods are dry enough to burn, they set them on fire in heaps; and the ashes are then spread over the land, with a due proportion of lime for a crop.

Provisions. Provisions vary more in their price in this country, than in most other parts of the kingdom, which is chiefly owing to the want of winter or green crops; and the want of granaries for the farmers, to lay up their corn in the winter against the summer months, of which more will be said hereafter.

Butchers' meat, from September to January.

Beef 2¼d. to 3d. a pound.
Mutton 2½d. to 3d.
Veal about the same.
Pork 3d. to 3d½. per pound.
Wheat 5s. per bushel.
Barley 3s.
Oats 20d. to 2s.

Our fisheries on the coast are of great value; but for want of a regular sale for them, the fishermen are not attentive to any sorts but herrings, salmon, and shell-fish; so that our supply of every other sort is very uncertain during the rest of the year. Butchers' meat is pretty steadily sold at 4d. to 4½d. per pound; at those times,

For remarks and additional observations.

times, wheat often rises to 6s. 6d. and 7s. per bushel, and barley to 4s. to 4s. 6d. Oats in proportion.

Roads. The state of the roads in this district, is much improved within the last thirty years, when the gentlemen of the county, seem to have begun to pay attention to this important branch of rural œconomy. A society was instituted about that time for repairing, by voluntary contribution, the public roads in Pembrokeshire; but this institution being afterwards found inadequate to so heavy an undertaking, some public spirited gentlemen proposed an act of parliament; which, after some opposition in the county, was obtained; for making several of the principal roads, turnpike. Two years ago, four new acts were obtained for making turnpike roads in Pembrokeshire, which completes the communication, from town to town, through all parts of the county, below the mountains.

The gentlemen above the muontains, declined including their roads in any of these acts; alledging, they could keep them in repair by the statute duty. A sanguine idea, which experience proves to be futile.

In a county, where good roads are so much an object of concern, to the land-owners as well as occupiers; and where a considerable proportion of the farmers are men of opulence; one cannot help lamenting, that money should not be advanced in sufficient quantities to complete the turnpike roads; but such is the case upon several of the roads included in the late acts of parliament, (the roads from Haverfordwest to Milford and Pembroke excepted) our new roads discover a lamentable want of exertion. The best modern methods of road making, are pretty well understood in this district, of which the two roads last mentioned are very good examples.

The

For remarks and additional observations.

The parochial and cross roads, which are not included in any of the turnpike acts of this county, require particular attention.

Until those roads are widened, it will be impossible to alter the width of our carriages; and we must jog on in the old beaten paths of our ancestors, without a chance of amendment.

One observation remains to be made with regard to the turnpike roads, and particularly the main road from Milford Haven to London; namely, that it was found too narrow at first, being barely 24 feet from ditch to ditch; and by scouring the ditches from time to time, it is now brought rather within its original width, which renders it extremely difficult and almost impossible to be kept in repair.

I therefore beg leave strongly to recommend to Gentlemen of the Old Trust, to widen that road to the breadth of 30 feet, as soon as their funds will enable them so to do; which their late attention to the expenditure of the tolls, leaves room to hope, will not be very long in effecting.

Before I quit the subject, let me recommend to the men employed to superintend the repair of this road, as well as others, to be careful in shovelling off the mud and filth, before they lay on a new covering. By the present method of laying the materials upon the dirt, the gravel or broken stone soon sinks down, and the mud again takes its station upon the surface; which by keeping the road perpetually wet and slabby, soon renders it founderous; and the effect of the new covering is in a great measure lost.

Farm Houses and Offices. The state of farm houses and farm offices in this district, is, for the most part, very defective. Many of our farms that have been taken into the landlords hands, for the purpose of improvements, are well

For remarks and additional observations.

well established with buildings and other conveniences; but by far the greater number, are, in this respect, in a very sad condition; and it would be difficult for an English farmer, to conceive the shifts and contrivances made use of, as substitutes, for proper accommodations.

Farm Buildings. The present method of binding tenants by their leases, to keep the building in repair at their own cost, and to find all materials for the purpose, does not appear quite so advantageous to landlords, as may be thought on a superficial view of the measure. At least this kind of agreement between landlord and tenant, may probably be one of the principal causes, of the inferiority of most of our farm structures; and I am of opinion, it will appear, upon mature consideration, to be ultimately injurious to the interest of the land-owners of this district.

The covenant by which the whole repairs are thrown upon the tenant, occasions our farm buildings to be very generally neglected. No country exhibits more wretched conveniences for farm uses, than are generally to be seen in this district. Very few convenient farm yards are to be met with, and the dung heap is commonly left to chance, more than to any methodical course of management.

It is no uncommon thing, to see the straw from the barn door, thrown promiscuously into a lane or highway, passing by the farm buildings, where it is left to chance; and its soak water frequently runs away, without any attention to the improvement it would produce upon grass land. The out-door stock of cattle, are permitted to ramble at large, during winter, over the whole farm; by which all the advantages of making dung, by a well regulated straw yard, are lost; and when the season for manuring his land arrives, the farmer scrapes every handful of scattered dung he can find, but feels himself much straightened in

that

For remarks and additional observations.

that valuable article, from his inattention to the making of it during the winter. Many sensible gentlemen of landed property, are aware of the inconveniences, arising from this mode of laying all repairs upon the tenant. Not one tenant in ten will keep his buildings in proper repair, or erect such new ones as his business requires. If landlords proceed to enforce such covenants by course of law, the tenant's ruin is the consequence; and it happens frequently when the lease falls in, that the landlord must expend two or three years rent in repairing the premises; or let the estate at an under value, in consequence of a new tenant taking the repairs upon himself.

Some landlords are of opinion, that if the leases were so framed, as to engage the tenant to do all workmanship and carriage for repairs, and new erections; and the landlord to provide all unwrought materials; the husbandry of the district would be greatly improved, and the landlord's interest not impaired thereby.

If, where old leases exist, the tenants were to allow the landlord five per cent. for the monies expended in providing materials for new buildings, I believe much good would result to both, by such measures: the face of the country would soon wear a better countenance; the possession of convenient, comfortable structures, would bring the tenantry to a neatness in the management of their farms; and raise their minds above the make-shift beggarly habits, which too many of them now practise. It is meant that the landlord should always be consulted, as to the extent, situation, and structure of the buildings.

Leases. The term of the leases, commonly granted upon lands in this district, is for three lives, and the life of the survivor.

The lands are always let at rack rent, there being no instance that I know of, of leases granted upon fines, except church lands.

For remarks and additional observations.

The tenants covenant to keep the houses, fences, gates, &c. &c. in repair during the term; and to deliver them so repaired at the end thereof; also to bear and pay all rates, taxes, assessments, and impositions, as well parliamentary as parochial.

Not to plough or otherwise break up any meadow land belonging to the farm, without the landlord's consent in writing; or to pay an additional rent, in case he infringes this covenant.

Not to sell or dispose of any dung, hay, straw, corn in the straw, or other compost produced upon the lands; but to expend the same upon the premises, in a proper and husbandlike manner.

Not to cut any trees or underwoods; which the landlord reserves, with mines, minerals, &c.

In some leases, the tenant covenants to manure every acre of land he breaks up, with a certain quantity of lime, and a proportional dressing of dung. Not to take more than three or four successive corn crops, at one course of tillage; one whereof to be a green crop; and then to lay the lands down with a mixture of clover and other grasses.

Commerce and Manufactures. The commerce of this country is very trifling, and cannot be said to have any influence on its agriculture; unless we allow, the exportation of corn when it is cheap, and the importation when it is dear, to be commerce. A commerce it is, of infinite prejudice to this district; for which the land-owners should studiously seek a remedy.

Cotton Mill, &c. The manufactures of the county, are too small to influence its agriculture to any visible degree. A cotton mill, near Haverfordwest, which employs about 150 people; a forge at Blackpool, and a set of iron and tin works on the Tivy, make up the catalogue of our manu-

For remarks and additional observations.

manufactures. The cotton mill employs a number of indigent children, and thereby becomes very useful to the neighbourhood.

An attempt was made a few years ago, to establish a linen manufacture in Pembrokeshire, by importing a number of Irish from Monaghan; and a like attempt was made to establish a Newfoundland fishery from Milford Haven, neither of which succeeded.

Americans. New Town of Milford. A considerable establishment is now in progress, at the new town of Milford, under the patronage and immediate direction of the Right Hon. Charles Francis Greville. A company of Quakers are arrived there from Nantucket in America, for the purpose of establishing a whale fishery to the southern hemisphere; from which great public advantages are expected to result, as well to this country at large, as to the adventurers in particular.—The outlines of a new town are marked out—a new wharf is begun—a turnpike road from Haverfordwest to the new town of Milford is in great forwardness; and a spacious, well planned, capital inn and offices, are already built upon the spot.

Harvest Work approved. The harvest work of this district, is performed with a neatness and security worth noticing.

The barley and oat crops, as well as the wheat, are all bound into sheaves. If the barley or oat crop stands tolerably well up, it is mown with a scythe and cradle; but if it happens to be too much lodged for mowing, then it is reaped. In either case, the corn is laid neatly upon the stubble, and due care taken to lay the ears all one way. When it has lain a sufficient time to wither, it is bound into small sheaves, and instantly stacked up in stacks of about a cart load each; taking care to set the buts of the sheaves outside and next the ground; the top is hackled, or coped with sheaves inverted, so that no wet can pene-

For remarks and additional observations.

trate. In this state the corn remains in the fields till all the hurry of harvest is over, and the farmer carries it home at his leisure. In a precarious harvest, this method may be found beneficial in any country. A little practice gives the people a quick method of doing it; and when the weather is changable, much corn might be secured in this manner, at short intervals, when it may be too late in the day to begin carrying barley and oats from cocks to a large rick or barn.

Fogging. The next practice in the agriculture of this district, which I can venture to recommend to other countries, is that of fogging grass lands; that is, letting the grass grow from a fortnight before Midsummer, and not turning any stock upon it till February or March. By this practice the farmer provides a good stock of keep for that season of the year when he stands most in need of it; puts his cows into good plight for calving; saves a great deal of hay, and improves his grass lands by the quantity of seeds shed upon the surface, by the fogged grass. His stock being out by day upon the fogg, and in his straw yard by night, augments his dung; which is the main-spring of his tillage management; and he gains, in a great measure, the advantages of a green winter crop.

The practice of putting cattle from fog fields into a straw yard at night, is so obviously advantageous, that I wonder any sensible farmer can overlook it; but the fact is such, that very few attend to this profitable and easy method of increasing the dunghill; and by letting the cattle lie all night upon the fogged grass, it is materially injured. The moisture of our atmosphere, combined with the grassy tendency of the soil, renders fogging particularly convenient.

Society for promoting Agriculture. A Society for the encouragement of Agriculture, Manufactures, and Industry, was instituted in 1784, under the patronage of Mr. Knox; which

For remarks and additional observations.

which flourished for the space of six or seven years, and then became extinct; insomuch, that the premiums obtained in consequence of the advertisement of the Society, the last year of its existence, have not as yet been settled.

Turn for Improvement. The inhabitants of this country are not forward in receiving improvements in agriculture; I mean the middling, and lower orders of them. A general prejudice seems to pervade the people, against every thing new, or differing in any respect from the old and beaten track in which they and their forefathers have trod. They all acknowledge the advantages of improving the soil; and yet very few practise it. When you come to examine their motives for a conduct so opposite to prudence; they tell you, they are afraid to let the land go out of tillage in good heart, lest their landlord should raise their rent at the expiration of the lease; and they are afraid of adopting English fashions into their mode of farming, lest their neighbours should laugh at them.

Such are the apologies I commonly receive from these people, for the worst sort of rural management that can be conceived; and how to excite a spirit of improvement in the class of people here alluded to, seems very difficult.

Certainly, a work so desirable can only be accomplished by the attention and good conduct of the landlord towards the tenants, in the first place; and by a proper regard to his engagements on the tenant's part, in the next.

In hopes some abler hand, will point out better methods, for promoting the general improvement of the soil of this district; I shall now venture, though with much diffidence, to recommend what strikes me as most likely to introduce amendment.

Suppose

For remarks and additional observations.

Suppose a gentleman possessing an extensive property, occupied by a numerous tenantry, was to select one or two of the most tractable, honest, and industrious farmers upon any connected tract of the estate. Suppose upon a farm of 150 acres. The farm being set up with a proper farm yard, a moderate sized barn, a stable, with a granary over it; ox-house, cow-house, wain-house, calves-cott, and piggery; with a shed on the west side, to shelter the yard, and for the outlying cattle to run under in severe weather. Hedges, gates, and ways of communication being in good trim, the farmer begins his operations, and raises the first year, ten acres of turnips; also such corn crops, as he finds the farm in plight to receive.

By a proper consumption of his turnip crop, and strict attention to the collecting of manure, he will get together a good body of dung and compost for the ensuing year; and may then increase his green crops, so as to establish a regular course of tillage husbandry.

System in Farming established. The proprietor of this farm, or his agent, is supposed to be well skilled in the management of green crops, and the successive growth of corn crops; to be active and diligent in instructing this farmer through the whole management of his farm; to see from time to time that he keeps a regular and just account of his expences and receipts; and that every thing is conducted upon frugal principles. Without this attention, no good can be expected to result from the trial. At the end of a few years, it will appear whether the farmer has benefited or lost by this mode of culture; and his neighbours will have a fair opportunity, of seeing the whole business carried on by a man of their own rank, whose reports they may receive with confidence. If they find the new method has turned out more profitable than their own; taking into consideration the improved state of the soil; there may be ground to hope the system will be adopted

For remarks and additional observations.

adopted by all of them. The tillage course established upon this farm, is intended as a preparation for laying down the major part of the lands in pasture, as fast as they become fit for that purpose.

Its probable Effects. Something like this, would convince people of the utility or loss of the green crop system; and the farmers would be satisfied with the report their neighbours gave of the trial. Gentlemen of fortune, trying experiments upon their own demesnes, do not afford that satisfactory kind of example to a neighbourhood, which is necessary to instruct their tenants. Remarks are always made with reference to the landlord's powers. A neighbouring farmer says; "I could farm like my land-"lord, if I had his purse."

In constructing farm buildings, the strictest regard should be paid to œconomy. The buildings should be just large enough to answer the purpose, and no more, erected upon the cheapest plan possible; and built firmly, and well secured against the effects of storms, so as to prevent, as much as may be, the expence of future repairs. An ostentatious display of buildings, disheartens a farmer who is to engage in a considerable share of the future expence of keeping them up; and such ought never to be built on farms intended to be let.

Situation of Farm Houses. The situation of farm houses in this district, is frequently very bad. They are in many instances, built in low bottoms, and in others, at the extremity of the land. Each of these inconveniences should be studiously avoided in all future erections of this sort; and also another inconvenience, which of late years has crept into this country; namely, that of erecting farm houses upon situations too elevated and exposed.

Three things should direct the choice of a situation for a farm yard: water, shelter, and centricity. Wherever this combination of convenience can be found, is the proper

For remarks and additional observations.

proper situation to build upon. Avoid, if possible, a western exposure; which in this district is the most distressing wind we have to guard against. In a farm yard lying to the south-east, and sheltered by the buildings from the west and north, the cattle always thrive best. It generally happens, that a stream of water may be brought to the situation, on which you wish to erect your farm yard. A good pond should always be made at the lower side of the yard, to reserve a stock of water for watering the meadows below. The profits resulting from such a conveniency, are too obvious to need further remarks.

Rot in Sheep. The rot in sheep is unknown in this district; at least I never heard of it.

The only lands we have, likely to bring on the rot, are the few small fens I mentioned under the article of draining; and these, I believe, are entirely grazed with horned cattle and horses, except the one now under a course of improvement.

Obstacles to Improvement. The obstacles to improvement are, excessive rains, and moist weather; and want of markets. Since the first obstacle cannot be removed, the only thing we can do, is to try if it can be converted to our advantage.

Not a Corn Country. It is an undeniable fact, that this is not a corn country. The general mass of our soil is loamy and naturally inclined to produce grass: insomuch, that we are frequently injured by the grass rising in our corn crops, even after making as clean fallows as can possibly be seen.

For these reasons, we ought to follow the line of management which nature has pointed out, and in which she lends us all the assistance we can desire; and convert more of our lands into pasture.

Dairy. The first branch of business on a grass farm is the dairy; which the women of this district manage very cleverly,

For remarks and additional observations.

cleverly, where they are provided with a good dairy and proper utensils. A dairy should be roomy, airy, and shaded from the sun; and wherever a stream of water can be brought through it, (which in this country may very generally be done) the opportunity should always be embraced. By this conveniency, no excuse will remain for a want of that most essential duty in a dairy maid, cleanliness; nor will the owner of the dairy find occasion to complain of neglect on this score.

Butter. We have always a demand for salt butter in casks and earthen pots from London, Bristol, &c.

Cheese also goes off in any quantities; and although the cheese of this district, is very scrupulously robbed of all the cream, to enrich the butter cask, it sells at 3d. a pound. Salt butter, in cask, has been sold at 6½d. a pound during the last summer; and latterly at 7d.

Rearing Calves. Oxen. The next branch of the grass farmers employment, is rearing calves; which answers extremely well in this district. The Pembrokeshire ox always finds a ready market in the feeding countries. Kent and Sussex have usually been the principal places of sale with our drovers; and of late years, great numbers of our oxen are driven into the midland counties.

Heifers. Heifers too, have usually found a ready sale at our autumn fairs; but the last season has been remarkably dead in this respect; the demand for bullocks and heifers, has not been known to be so small, since the American war; and the few that have been driven out of the district, were sold at least 25 per cent. under the usual price: but this, we hope, is a temporary evil, occasioned by events which we trust will soon subside; and bring things again into their former desirable course.

Want of Markets. By want of markets it is meant, that we have not a regular demand for butchers meat and corn throughout the year upon equal terms with thoſe

For remarks and additional observations.

counties that have manufactories established in or near them. The number of inhabitants who live by handicraft business, or who buy their provisions, is but small in proportion to those employed in agriculture; which occasions the demand for corn and meat in our markets to be comparatively small: hence it is, that those who grow a large quantity of corn find a great difficulty in selling it. We have corn dealers at the ports, who purchase corn during the autumn and winter months, at a price always much below what is sold at the same time in the open markets. When wheat is six shillings a bushel in the market, the dealers will hardly give five; and other grain in proportion. The reasons for this difference, between the dealer's price, and the market price, are these: he buys with a design to export his corn to Bristol, or some other English port: he must take care in buying to provide for storehouse rent, porterage, freight, insurance by sea, commission on sales at the port he sends it to; and lastly, for his own trouble and capital employed. Besides all these expences, he runs another material risk. Our corn is generally so damp, that it will not keep on the lofts without being laid thin, and turned at least once a week. If, in going to a port, a vessel meets with contrary winds, and is delayed on her voyage, the cargo frequently heats to such a degree as to reduce its price below prime cost; and then the dealer suffers a great loss by the venture.

Another difficulty arises with regard to the sale of butchers meat. Our markets are weekly. We have no such thing as a butcher's shop in the district. The butcher must sell his meat in one day, or it is left upon his hands; or perhaps disposed of in the evening at a very inferior price. If the poor benefited by these opportunities, a benevolent mind would rejoice thereat; but it generally happens, that the opulent avail themselves thereof

For remarks and additional observations.

thereof to squeeze bargains out of the unfortunate butcher. Our labouring poor live almost entirely upon bread and cheese, milk, and vegetables; except when herrings are plentiful on the coast, or in the spring of the year, when poor veal is to be got at a low rate.

Salt. From this statement of our meat markets, it is evident there must be considerable risk in making up fat pork or beef for sale, in large quantities; and the only remedy for this great obstacle to agriculture, seems to be the establishment of victualling stores at Milford Haven, for the purpose of providing supplies of beef and pork for the navy, and foreign garrisons and colonies—And if salt were allowed to be imported to this country upon low duties, for the purposes of curing beef and pork only, it would soon become as famous for its supplies as our neighbours.

Tithes. Another impediment to improvements in agriculture is, the present mode of paying tithes. On that subject I have the satisfaction of adding, that in all the intercourse I have had with that respectable and learned body, who are principally interested in tithe-concerns, that I never met with any one who did not express a wish, that some plan could be devised for commuting the tithes of their respective parishes. The lay impropriators are all of the same way of thinking: and as to the farmers, no doubt can arise about their sentiments upon so important a concern. They are, to a man, for a composition in money instead of paying their tithes in kind.

Act of 2d and 3d of Edward 6th. The act of the 2d and 3d of Edward the 6th for promoting the cultivation of barren lands, by discharging it from the payment of tithes for the first seven years after the improvement, seems to want an explanation. It is very generally admitted, that the plain and obvious intention of the act, was, to pro-

For remarks and additional observations.

mote the improvement of such waste lands as were of their own nature barren, and not capable of producing crops without some extraordinary expence of manuring. Under this construction of the act, its benefits would extend to all our waste lands, which are every where poor and barren in their natural state. But by the opinion of some modern lawyers, recently taken upon some cases of this sort, the act aforesaid is explained in such a way as to afford no exemption to our wastes; and this is a most effectual bar to improvement; insomuch as it gives the rectors too great an advantage. For instance, an acre of barren waste is worth half a crown or three shillings a year to let on lease: say three shillings. The tenant, at an expence of about 5£. an acre, puts this land into a proper state for a course of husbandry. Then,

	£.	s.	d.
First crop, Wheat, worth - -	5	0	0
Turnips (suppose the rector takes nothing from this crop) -	0	0	0
Barley - - - - -	4	10	0
Clover - - - - -	2	2	0
Barley - - - - -	4	0	0
Gross produce of crop in five years	15	12	0
The rector takes the tenth - -	1	11	2
The proprietor of the estate receives in this time - - -	0	15	0

Less than half the amount, of the rector's profits, in the same space of time.

To balance so unequal a division of income, between the owner of the soil, and the rector or impropriator; and to allow the farmer some indulgence, as a reward for his extraordinary labour and expence, seems to be a matter of much concern to every one interested in the success of agricultural pursuits.

In

For remarks and additional observations.

In cultivating waste lands, it would be equitable to allow the rector as much during the first seven years, as the waste usually produced.

Stock. Of the stock of this district, the horned cattle claim the first consideration, as being by far the most valuable stock the farmers of Pembrokeshire possess.

The Pembrokeshire cows are coal black, except now and then a dark brown: and sometimes a white face, or a white list along the back, makes its appearance.

Of late years, many farmers have been very attentive to the improvement of their cattle; by rearing bulls from their best and cleanest shaped cows, by which our stock is now getting into considerable repute in the neighbouring counties, whose breeders send to our fairs for bulls: which, however, are not sold at extravagant rates; from eight to twelve guineas being deemed good prices for two-year-old bulls.

The cow of this district is very fine boned, with a clean light neck and head, small yellow horns inclining upwards, good chine and loin, round long barrel, thin thigh, and short light leg.

She is always in good condition, if tolerably kept, and has a rich wave in her hair and an oiliness of skin, which ever denotes thriftiness of kind. This sort of cow, is to be met with in all such parts of Pembrokeshire, as are not impoverished by excessive tillage, and where tolerable care has been taken in the choice of bulls.

Weight. The weight of our cows, when full beef fat, averages about thirty-six stone, of fourteen pounds, the four quarters; and there is not perhaps in the kingdom, a breed of cattle more profitable to the grazier; or that prove better in the scales of the butcher.

All the English as well as Welch drovers, who drive cattle out of this country to the feeding counties in England, agree, that the true Pembrokeshire ox is the favorite beast with

For remarks and additional observations.

with the graziers. The oxen of this district seem to get rid of their steery figure sooner than those of other countries. When turned of three years old, they have an ox-like appearance, which I do not recollect to have seen elsewhere; and if well kept, they will grow and get beef fat in the fourth year.

Oxen-Weight. The black ox bears his journey well; and will improve in his flesh as much in three months, as some will in five. The average weight of our oxen at five years old, may be taken at about, from 50 to 56 stone, of 14 pounds, the four quarters; when full beef fat, some will run to 80 stone.

Improvement. To attempt the improvement of such a breed of cattle, is certainly the interest of every breeder in the district: and this desirable work is begun in many parts of it, by due attention to the fashion of our cows; and by rearing bulls from such of them as are remarkable for thriftiness, or being always in health and condition.

Milch Cows may be improved. It is a general remark in this district, that our cows are not so productive to the dairy as those of many other counties. The mixed kind of farming, which is almost every where practised, makes it difficult to ascertain a general average for the produce of cheese from each cow, owing to a considerable portion of the skim-milk being used in the families. Of butter, some make seven pounds per cow through the dairy season, from the middle of May to the middle of October: but this is only done in our best pasture lands, and in a few instances.

I believe five pounds may be taken as a fair average for the whole district, in the present state of things; and perhaps this is rather more than the truth.

In Milk only. If our breed of cattle can be improved by any mixture from other counties, it is evident we stand in need of such improvement in the article of milk only,

and

For remarks and additional observations.

and it seems to be an important object to effect; but great care must be taken to avoid a heavy sluggish mixture. If any light active breed, noted for producing a large quantity of rich milk, were cast into our stock, I see no reason why any danger should be apprehended from the mixture; and no doubt but our better sort of farmers, would readily try the experiment. Perhaps the introduction of a few heifers, may take better than that of bulls; and if the heifers were delivered into this county, at the price they cost in their native one, no great risk would be run by the purchasers of being ultimately out of pocket by them.

Cross of Hereford. I have lately been informed, that the favorite breed now in Herefordshire, is from Pembrokeshire. Black heifers and the lightest made bulls of that county; but whether this cross is liked on account of beef or dairy, I have not yet been able to learn.

Leicester. An attempt was made about thirty years ago, to improve the breed of cattle in this district; but however laudable the intentions of the gentlemen who made that attempt were, they certainly mistook the object of improvement, by going for an increase of weight in hide and bone; for which purpose they purchased at monstrous prices, the old heavy Leicestershire kind.

These cattle crossed with ours, made them sluggish and unfit for labour: slow in feeding, coarse in their flesh, and altogether ill calculated for stocking this district. By this fatal error our farmers became more than ever attached to their own breed; and prejudiced against every thing that bore the name of *English*.

Notwithstanding the impression made upon the minds of our farmers by the failure of the attempt just mentioned, which is still kept in memory throughout the district; we have a sufficient number of intelligent men, who will not suffer prejudice to overcome their understanding; and who will (I am confident) gladly try any well considered

plan

For remarks and additional observations.

plan for improving the dairy stock; provided it can be done without the risk of losing the valuable qualities our cattle possess in other respects*.

Sheep. The sheep of this district are rather inconsiderable, as we have no great markets, to which they can be sent in large quantities, when fat. Our want of green fodder in winter, makes mutton rather dear in the spring and first summer months, but afterwards, the flocks of mountain sheep upon the hills, become fat, and are sold at our markets at low rates. Our great distance from manufacturing towns, seems to cut us off from any speedy likelihood of making sheep a valuable part of our stock; and we have but few instances of farms keeping large flocks.

Breeds. Weight. Wool. The breeds that are found to answer best, are crosses between the native mountain sheep of the district, and the Gloucestershire Would; the Dorset and South-down tupps. The breed thus crossed, produces a strong hardy short wooled sheep, weighing from 14 to 16 pounds a quarter; and producing about four pounds of wool.

Sheep. As we have no markets for heavy mutton, and the better sort of people dislike large meat, I do not know that any breed of sheep can be introduced, which would answer better than those we now possess. It may be very well to keep up the stock of the country by now and then a supply of ewes from the counties of Hereford and Gloucester; which our bullock drivers, returning home, bring over at a cheap rate. There is a natural wildness in Welch sheep, which makes them prone to climing our hedges; and as the sea wind in many parts of the country, occasions the quicks to grow very slowly; it is of much consequence to farmers in

* The cross with the Ayrshire Scotch cow, is the most likely to answer. See the Surveys of the Counties of Ayr and Renfrew, for an account of that breed.

such

For remarks and additional observations.

such situations; to procure sheep that will stay quiet in the pastures.

The Herefordshire ryeland sheep, have had a fair trial, (unmixed with the Welch) for some years past; and are found to answer very well.

Horses. The horses of this county are of various breeds: the old Pembrokeshire kind, is a truss short jointed nag, of about 14 to 14½ hands high; and makes a very serviceable roadster, if not over weighted. The best fashioned of these, are generally broke for the saddle, and are in good demand at our fairs, among the dealers who come from the interior parts of England to buy them. Mares of this class are sometimes put to blood horses, which our principal gentlemen of fortune introduce, much to their praise; and from this cross an excellent serviceable kind of horse is produced; either for the chace, the road, or for harness; according as he turns out for fashion, speed, and strength.

A good cross is produced from the truss draught horse of Herefordshire and our mares, which are found to answer extremely well for husbandry purposes; being hardy, strong, docile, and kept at an easy expence. The Suffolk punch has been introduced of late years, by a gentleman whose zeal for promoting the improvement of the district is conspicuous; and it is thought the cross of the Suffolk with our native mares, will tend greatly to the improvement of the draught horses of the district.

Arabian. Some years ago, attempts were made to improve our breed of hunters, by introducing the full blood Arabian. These were crossed with our native mares, and produced a miserable race of under-sized feeble animals, that were not fit for any purpose whatever.

For remarks and additional observations.

It seems clear, that the full blood horse, with a good share of bone; and the moderate sized draught horse, are the most useful for keeping up and improving the breed of this district.

The first for the chace or road, and the latter for the chaise, the cart and the plough.

Swine. Swine are a valuable stock in this district, and are a cross between the Berkshire and the native Welch breeds. They are easily kept, and feed very quickly, when of a proper age for bacon or fat pork. When the demand for lean hogs is brisk, our farmers make large profits of their swine; but when the English pig-drovers, do not come into the district, to purchase the lean hogs, they become a heavy and expensive article to the farmer; which is an inconvenience we shall always be liable to suffer by, until some steady vent is found to take of our hogs fatted; and then our farmers need not be over cautious, to keep their stocks of hogs, within such narrow limits, as they now find it necessary to do from motives of prudence; lest by being over stocked, and not finding a market for their lean hogs, they should be obliged to keep them upon good corn; at an expence their future price will not pay for.

Salted butter, has been already mentioned, as an article of great importance to the district.

Package of Butter. There seems to be some regulations necessary, to check the fraudulent practices that have prevailed, in the package of our butter, in this and other counties of South Wales, by which its character is much impaired, at the principal ports of the kingdom to which it is sent.

I apprehend, if inspectors were appointed at every sea-port where butter is shipped, to examine its quality and mark

For remarks and additional observations.

mark it, according to the class to which each firkin belonged, viz. first, second, and third; a spirit of emulation would rise among our dairy women, and every one would strive to produce butter of the first quality. The worst sort may be noted as grease, and put at a price accordingly; by which means, those who pack bad and rancid butter, would find their fraudulent intentions frustrated; and the honest cleanly dairy woman, would be rewarded for her care and neatness.

Irish Laws respecting Salt Butter. The farmer's name and place of abode may be marked on every firkin. The inspector should be paid a reasonable sum per firkin, for his trouble of boring, examining, and marking the quality of the butter; and a penalty inflicted upon him, for neglect or fraud in the discharge of his duty. Such other matters as might be thought necessary, would occur in the course of framing an act of parliament for this salutary and necessary purpose; in which great helps might be drawn, from a perusal of the laws now in force, for regulating the package of salt butter in Ireland.

Corn by Weight. The indiscriminate manner, in which our corn dealers buy oats and other grain for exportation, is an obstacle to the growth of good grain. It is a common practice with many of them, to give one general price for the respective grains, without proper regard to the quality. If all grain was sold by weight, instead of measure; the improving farmer, who takes care to sow good seed in well prepared soil, would receive a just compensation for his pains; and the bad one, who attends to neither of these important points, may be stimulated to amend his practice.

Oysters. Oysters are an article of great value in Milford Haven and its neighbourhood; by giving employment to numbers of industrious people, at that season of the year, when their labours are at least wanted in

For remarks and additional observations.

the fields; and affording winter employment to many, who would otherwise be much distressed, for the means of supporting their families. But for want of some regulations for the government of the oyster fishery, there is much reason to dread the breed will be totally destroyed; and that valuable source, of employment to the poor, and luxury to the opulent, be thereby cut off. It is submitted to the gentlemen of that part of the district, to take this valuable branch of natural wealth into their consideration; and by a timely interposition of their power, to rescue from destruction, so great a blessing, as the oyster fishery, (under proper regulations) may prove to the neighbourhood, and to the community at large.

Hints for Improvement of the different Soils.

The great variety of soils in Pembrokeshire, and the manner in which they are every where interspersed, renders it a very difficult task to point out, the particular sort of improvement, to which each soil is adapted.

The good and bad soils are interspersed throughout most part of the district; and there are very few extensive tracts of equal soil.

This circumstance renders it necessary for every occupier of land, to consider the nature of the piece of ground he undertakes to improve, and to apply such methods as seem best calculated to obtain the end.

Red Loam. Grass Land. It requires very little argument to convince the practical farmer of this district, whose good fortune has fixed him upon the brown soils upon limestone; or upon a red loamy soil, supplied with a spring or constant stream of water for his cattle; that the

For remarks and additional observations.

the best profit he can make upon such land, is by grazing; and therefore the best thing he can do with such a soil, is to get it into good condition, and lay it down in grass. The instances to be seen, in most parts of the southern hundreds, are sufficient proofs of the advantage of this mode of occupying these soils.

The grey loam produces excellent natural grasses, and answers well as dairy or rearing land, wherever it is found of a tolerable depth; and if the occupiers can prevail upon themselves, to lay this land down in good heart, it never fails to be grateful for the kind treatment they give it. Where this soil is shallow, upon a dry bottom, it is found to produce excellent crops of barley and oats, and intermediate green crops; with good returns of artificial grasses; and by keeping it in such a course of management, it answers the purpose of tillage, whilst the better soils of the farm are kept for the dairy.

Where this soil lies upon a clay or moist bottom, it is well qualified to be converted into meadow; by proper draining, good manuring, and a moderate course of tillage.

Most of our moist lands lie with an easy slope, so as to be drained at a small expence by judicious management; for want of which, a great deal of unnecessary and oftentimes ineffectual expence is incurred, by making under drains, which in clays, are very apt to run together, and choak the drains. Instead of under draining, a very simple, cheap, and useful kind of fence may be made, to divide the lands into moderate sized inclosures, and answer the purposes of draining at the same time. Let a morassy piece of ground, lying on a slope, be inclosed by making an open trench or drain at the upper side, between the wet and the dry land: let this be six feet wide at the top; three feet or three and a half deep, and eighteen inches wide at bottom; neatly sloped at the

For remarks and additional observations.

the sides; a sod facing on the lower side of the trench three feet high, and all the out-cast of the drain thrown behind the sods. This gives a complete fence, which may be planted with willow or alder, or sown on the top with furze, according to the situation, and the will of the owner. Care must be taken to conduct the drain so as to have an easy fall for the water, from the middle or either end, to the side fences of the inclosure. The side fences will also be made in the same manner, and one or two cross drains of the same kind may be made parallel to the upper one, so as to divide the field into two or three parts, according as the circumstances of the ground, or the conveniency of the occupier requires.

Lands thus drained, generally require paring and burning; and in most situations and soils of this nature, it will be found the most expeditious mode of bringing the land into cultivation.

The ashes produced by paring and burning, with about six common cart loads of lime to each acre, will insure a fair crop of wheat, cole-seed, or turnips; after which, the only error the farmer can possibly fall into, is, that of taking too many corn crops, before he lays his land down in grass.

The peaty soils upon moist bottoms may be treated in the same manner; and in general, it will be found advantageous, to ridge the land up in ridges of 20 or 24 feet wide; always ploughing to the back of the ridge, by which means the furrow or rean becomes a drain to each ridge; but this must not be done with the first crop, if you sow wheat; as it will require to be laid in small ridges to stand the winter, in order to keep the roots of the corn dry. In all succeeding crops, the large ridge may take place.

Having described the ill-contrived plough in common use in this district, it may be thought necessary to recommend

For remarks and additional observations.

commend a better. Some of the best ploughs I have seen in Wales, are in use about Machynlleth, and were brought there from that part of Shropshire which adjoins to Montgomeryshire; the share is sharp pointed and winged, the earth board curved and plated with thin wrought iron; it has two handles, which gives complete power to the holder; the whole plough is compact, light and firm. It turns as neat a furrow as can be imagined; and is calculated for all sorts of land, hilly, as well as level, better than any other plough I have yet seen in Wales. An excellent plough for all free soils, and tolerable even land, is used near Pembroke. It works with two moderate sized horses abreast, and dispatches a great deal of business in a very neat manner. And as this mode of ploughing requires no driver, the advantages of adopting it, upon all suitable soils, are obvious.

Some of the farmers about Machynlleth, told me, the plough would not work well in stoney land; true, but then the stones should be picked off the land every time it is ploughed and harrowed; and in a short time the land would be properly cleaned of stones, which is a part of rural management too little attended to throughout this country in general. The large stones should never be suffered to remain in the land; and it would astonish a neat farmer from some counties I am acquainted with, to see how these people tumble and labour amidst stones that are fit to supply the paviours. I have seen instances where the damage done to the ploughs and harrows has been much more expence to the farmer, than it would have cost him to get those large stones cleared from the land. Indeed this is by no means a stony country; and it is very shameful to see, the arable lands suffered to indure an injurious incumbrance, which may be remedied at a very trifling expence of labour, performed on easy terms by women and children. The

coast

For remarks and additional observations.

coast farmer will understand, that I do not mean to rob him of the advantages he derives from a stony surface.

Granaries. It has been remarked, that grain is frequently exported when cheap, and imported when dear. This evil is obviously against the common interest of the country, and ought to be the object of every landlord to redress.

The great cause of this injurious traffic is, the bad state of our farm buildings, and the want of granaries for those farmers who can afford to keep a stock of corn upon lands, to lay it up in the winter against the summer months. At present, our farm buildings are so deficient, that a farmer who is obliged to thrash out his barley during the winter, in order to obtain straw to support his out-lying cattle, has not room to keep the corn; and is constrained to sell it, at whatever price happens to be given by the corn dealers. The utmost many of them can do, is to lay up as much as will supply their own families during the summer, at which time the poor working people of the district, are generally driven to the most deplorable distress. Barley is the common bread-corn of the district. Scarce any of the working people eat wheaten bread; and they find oaten meal too expensive to use, except for porridge and flummery.

By the month of June, the stock of barley is generally pretty far exhausted; and then the corn dealers either import barley from the English ports, or sell out the stock they have bought in the preceding winter. The price hardly ever fails to be a shilling or eighteen pence a bushel more than it was in the spring; and the poor labourer, who at the best of times can earn but a scanty subsistence,

For remarks and additional observations.

subsistence, is then reduced to a state of distress, which calls aloud for the assistance of the affluent.

If our farms were more generally furnished with proper granaries, these evils would not exist. The farmer would find his amount in laying up his corn, till a season when he might sell it upon such terms as to answer his trouble and expence of keeping it; and the poor man would find a comfortable supply of bread-corn at an easy distance from his cottage.

Buildings. It is a maxim pretty generally admitted, that a gentleman of landed property cannot lay out his money to so much advantage any where, as upon his own estate. Would it not, then, be a most laudable thing in landlords, to furnish their farms with proper and convenient buildings, to enable their tenants to make the most of the produce of the earth? For all monies expended in this way the tenants could well afford to pay five per cent. interest, in addition to the rents they now stand at; and the landlord should be satisfied with that addition, as he would receive the utmost present value of his money, and the estate would increase in value yearly by the benefits resulting from the improvements produced by the buildings. It is a mistake some landlords fall into, to calculate from buildings of the same rate of interest as if they were to erect a house in a town, where no possible advantage can arise, beyond the rent the house will let for. In such situations the interest must be calculated at a higher rate, because the house is a perishable property; but, the necessary erections upon a farm, occasion the future improvement of the soil; and the proprietor is alternately benefited there in as great a degree as the tenant.

Good Tenants to be encouraged. Nothing promotes the cause of agriculture more, than giving proper encouragement to improving tenants, who keep their farms in neat

For remarks and additional observations.

order, and their soil in good condition. Wherever a landlord perceives such a progress upon any of his farms, I humbly presume he cannot promote his own interest better, than by holding out all reasonable assistance to the industry of the farmer. When his lease expires, it is an act of equal justice and policy to give such a tenant a substantial proof of the preference he holds in his landlord's esteem. If larger offers are made for the farm, than it may be fairly deemed worth, they ought not to be listened to. It is dangerous to let a tenant, whose good management you are not confident of, come upon a farm that has been put into good condition. The man who has improved it, is more likely to set a proper value upon his former labours, and to keep the lands up to what he has brought them to. Indeed it is notorious, that those estates, whose proprietors have the good sense to treat their tenantry with candour and moderation, are much more productive, than those of other proprietors, whose conduct is harsh, and sometimes severe.

Collieries. The collieries, which run in a western direction from Carmarthen Bay to St. Bride's Bay, have a material influence in checking the progress of agriculture in the part of the county through which they pass. No canal navigations, no railways have yet been established for carrying the coal and culm of these collieries to the shores and creeks where they are shipped. All the carriage is done by carts, drawn by two oxen and two horses, to the total ruin of the roads. And as this business employs the country people during all the spring and summer months, they pay very little attention to the cultivation of the ground. It is a kind of dissipated life, which the carters become fond of; affording frequent opportunities of tippling, and having fewer hours of labour than the steady works of agriculture.

Horses

For remarks and additional observations.

Horses are employed in drawing water from many of the coal works. Steam engines have not been introduced, and water-wheel pumps can only be erected in particular places; so that it seems the particular province of coal proprietors, to consider how much the application of canals, railways, and steam engines would increase their profits, by abridging the expences of working the collieries.

Lord Milford has lately made part of a small canal near his coal works at Kilgetty. The country is indebted to my Lord for this first attempt at this valuable sort of improvement; which, I am told, was planned by his Lordship, and executed (so far as it has gone) by his own colliers.

It seems to be universally agreed among the skilful in the art, that canals near the coast, intended to reach a certain point inland, should begin at the highest level the ground will admit of, in order to reach as far as possible upon one line. Unfortunately, the construction of Lord Milford's canal does not accord with this established principle; and is got so much under level before it arrives at the colliery it was meant to serve, that the benefits it would otherwise have produced, are in a great measure lost.

The undertaking, however, must be allowed its due share of merit; and is, upon the whole, better executed than could have been expected.

In order to shew the coal proprietors, what is expended in carriage by the present mode of managing that part of their business, I have procured an account of the coal and culm shipped from the county of Pembroke during last year, 1792; from which I make the following calculation. It will be found rather below than above the savings that may be made in the article of carriage.

For remarks and additional observations.

Exported and carried coast-wise from the port of Milford in the year 1792.

Coals exported	—	409	chaldrons, Winch. meas.
Culm exported	—	6,016	ditto
Total exported		6,425	
Coals carried coast-wise		10,347	chaldrons, Winch. meas.
Culm carried coast-wise		43,751	ditto
Total carried coast-wise		54,098	

Total exported and coast-wise 60,523 chaldrons.

Half this quantity may be allowed as situated so near to the shipping as not to admit of any improvement in the article of carriage by means of canal navigation. The other half comes from the works lying at a distance from the shipping—from Jeffrestone, Begelly, Rynalton, Yerbeston, &c. the average price of carrying, is about 18d. a cart load; each chaldron is about two cart loads: therefore 30,261½ chaldrons makes 60,523 cart loads at 18d. £4539. 4*s*. 6*d*. The conveyance of this coal and culm by canal navigation would be about one-fifth of the present cost; which, deducted from the gross sum now expended yearly in carting,

		£.	*s*.	*d*.
viz.	—	4539	4	6
One-fifth	—	907	16	10¾
Saving	—	£.3631	7	7¼

This sum would pay the interest of about £.72,600, at 5 per cent.—a sum far beyond what would be necessary to make canals to all the collieries within the compass of this

For remarks and additional observations.

this calculation. Nay, I will venture to assert, that less than half the capital would complete the business.

What obvious advantages would result from such an improvement? and is it not astonishing, that a country like this should have remained so long unassisted by the mechanical improvements which produce such immense benefits to other parts of the kingdom!

There seems nothing wanting but a proper spirit of enterprize in the coal proprietors. Whenever the political agitation of the kingdom subsides, which there is good reason to hope will be very shortly, there cannot be a doubt, but the spirit of canal making will be as vigorous as it was two years ago, and that monied men will be glad to subscribe towards such undertakings in Pembrokeshire; whose collieries are yet extremely rich, but want the application of proper machinery, to render their profits equal to what they ought to be.

By the introduction of steam engines (I speak from the opinions of the best informed men upon the subject) all our old works, which are now lying under water and useless, could be recovered; and the deep veins of coal, which are said to be more valuable than any that have been hitherto worked, might be brought to market.

The coal and culm shipped in the year 1792 in the port of Milford amounted to £.37,426, besides the vast quantities consumed in the country, in fuel for the inhabitants; and for burning lime, drying malt, and smith's work.

A most important advantage remains to be noticed, as the immediate consequence of introducing canal navigation. The teams and people now employed in carrying our coal and culm to the shipping, would become subservient to agriculture. The whole country about the collieries would soon be cultivated and improved, which now lies in the most disgraceful state of sterility; and the scarcity, which in the present way of management frequently

For remarks and additional observations.

quently prevails among these useful people the colliers of Pembrokeshire, would no more be heard of. Thousands of acres which now contribute hardly any thing towards the support of man, would soon become productive; and increase, to perhaps four times their present value.

There are numerous situations where railways may be constructed to great advantage; by which considerable savings may be made, independent of the foregoing calculations.

Nothing should be omitted to render the working of these valuable collieries productive; since it is asserted by the most skilful men, that none of the rival collieries of South Wales are equal in quality with the Pembrokeshire coal.

POSTSCRIPT.

SHEEP. Since writing the preceding sheets, it has occurred to me, that the red-water is a disease to which the sheep of this district are subject. One farmer lost sixty pounds worth of sheep by this disorder in one season, and he says, they attributed the red-water disease in his neighbourhood, to the pirk grass which grew in great quantities in some of his fields; and the sheep were observed to be most liable to the disorder when grazing in those lands.

Duty on Culm. A gentleman whose landed property lies principally above the mountains, says, the duty on culm carried coastwise is an impediment to agriculture in those parts; inasmuch as it encreases the expence of burning lime for manure.

That if the duty was taken off culm carried coastwise, as was done last year in Scotland for coals, it would greatly promote

For remarks and additional observations.

promote the cultivation along the North coast of Pembrokeshire and Cardiganshire.

Manufactures. The woollen manufactures seem to be the most likely to succeed in this county, under proper encouragement. All our poor women have a turn for spinning wool, but for want of some regular establishment to set them at work, very little industry of this sort is observable among them.

A few yarn stockings and some narrow cloths are made; but not by any means sufficient for the consumption of the county.

Strangers. It may be proper to suggest for the guidance of the Board in any plan they may adopt for improving the agriculture of Pembrokeshire, that whatever new practice is attempted, will be most likely to succeed through the medium of the natives of the country. They have an unconquerable diſlike to any thing introduced by strangers; and not without some reasons; as most of the people who have come into this country from the English counties and commenced farmers, were in bad circumstances at the outset, and therefore have not succeeded in their undertakings; and the inhabitants, eager to reprobate any thing new, readily attributed their failure to defective practice rather then the real cause—want of capital.

Granaries. It has been recommended to build granaries over stables; which should be understood as merely tending to abridge the expences of farm buildings by leſſening their number; but it is well known, that corn keeps best upon lofts erected upon low pillars, so as to admit a free circulation of air. This kind of structure affords the best security against vermin.

FINIS.